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The Nature and Treatment of Leprosy.

EDITOR SATURDAY PRESS.—Sir: Considering the treatment of leprosy it is desirable to draw attention to some well established facts relating to the nature and history of the disease. And foremost is the modern discovery that leprosy depends on the invasion of the body by a microscopic germ, which has been multiplied in the tissue, impairs the functions of the nerves and other organs, and eventually terminates in the destruction and removal of important parts. Doctor Aring has demonstrated the presence of this germ in the leprosy of the Hawaiian Islands and he says: "Every leprosy is regarded as a bacterial disease."

Now we have no evidence whatever that leprosy is originated in any other way. The germ is not like that of diphtheria, which grows and propagates in a malarial soil. No one can become a leprosy sufferer than by the acquisition of the germ either from his parents, by direct hereditary transmission, or from communication with a leprosy sufferer in a condition favorable to the transmission of the germ.

HEREDITARY TRANSMISSION.

Although there has been an almost universal belief in the transmission of leprosy from parents to their children it must be admitted that the evidence is very incomplete. In the case of syphilis it is otherwise. No parent diseased by syphilis in an active state can have a healthy child. The disease may infect the infant yet unborn and if the symptoms are not already manifest at the birth, they certainly appear soon afterwards, while it is well known that leprosy scarcely ever makes its appearance until the child is five or six years old and more frequently at the time of puberty. Indeed it may not appear at all. That the children of leprosy sufferers are more frequently affected than those of others is only probable, because they are more exposed than others to the reception of the germ in the intimate associations of domestic life. But the rapid extension of leprosy in the Hawaiian Islands in the course of a single generation proves incontrovertibly that direct hereditary transmission plays but a small part in the propagation of the disease. It is therefore a satisfaction to know that the children of leprosy are neither necessarily nor inevitably diseased. If we believe that they are born with a special defect we shall be encouraged to remove them as far as practicable from the sources of infection.

THE PROPAGATION OF THE GERM.

No fact is more thoroughly established than that every disease-germ possesses specific character, spreads in a definite manner, affects particular structures of the body, and produces certain definite changes and effects upon the tissues. The growth, propagation and even violence of germ poisons are favored or lessened by surrounding conditions and especially by certain states of health and constitution, which are in turn determined by heredity influences and the sanitary conditions of ordinary life. The investigation of these questions is now engaging the attention of scientific men and much is to be expected from the researches of Doctor Aring. Although our knowledge is at present small we shall nevertheless obtain a better insight into the nature of leprosy if we compare its history and effects with that of some other allied disease-germs of which our knowledge is somewhat more extensive.

For example, typhoid or typhus fever is a remarkable disease, dependent on the presence in the blood of a peculiar germ. This germ breeds and multiplies in the body and it is very easily communicated to doctors, nurses and surrounding people. Now the typhoid may attack individuals in apparently a perfect state of health but it flourishes only on a starving population. It cannot spread among a well fed community, and even the patient may generally be restored to health by a liberal diet.

The germ of consumption is still more closely allied to that of leprosy. It has almost the same microscopic appearance, and is probably propagated under conditions somewhat similar. It has been demonstrated that the germ of consumption is the same in the sputa (spit) and given off in the breath, and its communication from person to person is only slightly more difficult than in the case of leprosy. The germ of consumption like that of typhoid fever requires a favorable soil. Every one inhales them but it is certain that perfectly healthy people effectually resist the growth of consumption. Spiritism and leprosy germs introduced into the body apparently seize on different tissues. Consumption germs attack the lungs, the spleen, the membranes and the central organs. The spleen is found in the blood, while the leprosy germ settles on the skin and nerve trunks. In consumption the appetite is lost, the powers of digestion and assimilation are impaired. In leprosy the food is eaten with hunger and assimilated without inconvenience, but its uses are prevented and whilst the appearance may be fat and fleshy, the bones and extremities are wasted and the want of sustenance is present at the necropsy of a young girl who died during my visit to Molokai. Doctor Aring will probably demonstrate that the body was invaded by the leprosy germ. There were the usual symptoms and appearances, but it was observed that the state of the body was such as to indicate death by starvation rather than by the effects of any one disease. The stomach and intestines were empty and there was no trace of any vital organ. The lungs, heart, liver and spleen were of the usual appearance. One remarkable condition was alone observed. There was absolutely no blood in the body. The lungs were unusually pale and when the great blood vessels were divided less blood escaped than would have been found in a child of two years old. She was a leprosy sufferer and was starved to death.

THE HISTORY OF LEPROSY.

Throughout the world leprosy has been invariably represented as associated with a peculiar and depressed condition of the health. It is the testimony of all physicians that it occurs chiefly among the poorest and lowest of the people. It is to be found in all climates, on the shores of great oceans in the mountains of Lebanon, the high lands of Persia, the valleys and plains of Hindostan. All diseases are preyed by bad dwellings, malarial surroundings, filthy habits and unsuitable or insufficient clothing, but leprosy is rather to be found in connection with insufficient irregular and unwholesome food. In Egypt where leprosy has been endemic since the days of the Pharaohs, the people used to live on fish and a glutinous sort of bread made from the roots of the lotus, a water plant. This diet was very similar to that of the Hawaiian people. In the West Indies, Cape of Good Hope, Ceylon, Corfu, Calcutta and Corsica, Leprosy is attributed to the

use of salt and tainted fish. In India to the use of unseasoned food. In Norway to the use of salt fish, meat, potatoes and bad cheese. Fresh meat is a rare luxury and the disease is further promoted by the depressing effect of exposure to cold without sufficient warm food. The Jews suffered greatly from leprosy. In the wilderness and in the desert, where the food was but poor food. Although of Persia state that in Arabia the leprosy only occurred among the very poor who were compelled through poverty to drink muddy and semi-purified water, to eat animal flesh (an evidence that meat was a rarity) whilst many lived on semi-purified cheese. In the middle ages the poor suffered from plagues and famines.

In the 18th century there were famines every six or seven years. All the common people were ill fed. A knight was able to beat a score of them as well fed Englishmen can beat a score of Hindostan today. In the 19th century the cultivation of vegetables was so rare that Henry of England had to send to the Netherlands for a salad.

During the last two centuries and in spite of wars and political oppressions there has been a substantial improvement in the condition and feeding of European peoples. And just in proportion as the physical condition of the lower orders improved just so rapidly did leprosy decline. And now the disease lingers on in those districts where the habits of the people still remain below the standard of good living. Whether in India or China whether in Norway or on the coasts of the Mediterranean, whether in the valley of the Himalayas or the banks of the Nile, Leprosy still flourishes among people whose physical power is retarded by the effects of disease germs, whose lives are marked by the use of insufficient and unwholesome food. Leprosy has totally disappeared from prosperous and well fed nations. And whilst, under conditions as yet obscure, it may attack a healthy and well fed person, like the typhoid fever, it cannot extend among a truly healthy people. The English races have outlived it as they have done many other plagues and as the standard of public health is raised, that of leprosy must fall. No individual however dares to defy its power, and its presence, and in every one is interested in its limitation.

But I may be asked to explain the sudden outbreak of leprosy in the Hawaiian Islands. Now I cannot accept the ordinary account of its introduction for the first time some 35 years ago. It seems to me that in bygone times Spanish commerce must have been introduced during commerce with other races, but that the conditions were then less favorable to propagation than they are now. All our inquiries go to prove that the natives of Hawaii were in former times stronger than they are now or have been during 30 years. Since the advent of the missionaries there has been a total change in the habits of the people and a decline in the standard of physical health. In olden times severe industry was the common lot. The chiefs superintended both work and play. Confess as it may, sound in some, it appears to me that the physical power of their nature has been greatly impaired by religion, education and clothing. The many sports of the people gave place to hypocritical games, the songs and dances were exchanged for hymns and prayer meetings. It is a fact well known to planters that the best native laborers are grandfathers of the rising generation. The educated youth who has been taught the habits of idleness and the pleasure of living on his wits, no longer practices the sports of his ancestors—or rather upon the skin—"where," asks Mr. Gibson, "is the Hawaiian warrior now? Where is the slinger of the spear? The spearman of the chiefs? The dextrous maulman? The faithful husbandman? The deft and bold maneuverer of the war canoe? Where are they? Where is the hero? He is gone and you will find in his place the tricky lawyer, the lying politician, the hypocritical preacher and the civilized loafer." Nor can we doubt the unsuitability of European clothing or its ill effect upon the native habit. The skin of the Hawaiian was acclimated by centuries of exposure, like the skin of the white man of Europe. They had no more need of covering than a Chinese dog, and it is probable that no European will suffer from excessive clothing.

But were the evidence of physical degeneration less complete it would be proved by the diminished population I may attribute this diminution to any secondary cause we please, but syphilis or measles. The introduction of foreign races, the immortality and inconstancy of the women or the drunken habits of the men, but we shall be obliged to acknowledge that a degenerating people cannot propagate. They will have small families and their children will not survive.

It seems to me proved that, in 1853, the Hawaiians were in a condition altogether favorable to the growth and spread of leprosy. Nor is this conclusion altered by the fact that many strong and apparently healthy persons have been subjects of leprosy; we have already noted that leprosy like typhoid fever often oversteps its natural limits. Sometimes it attacks the whites. But the fact nevertheless remains that there is in the majority of cases an obscure though positive degeneration of physical power without which even in the case of individuals, leprosy cannot be propagated. It may also happen that these exceptional instances may be due to a special mode of introduction, for, whilst in the case of consumption were contact of the strong and healthy with the sick consumptive may be harmless there is every reason to believe that even the strong and healthy would amount to a positive inoculation.

TREATMENT OF LEPROSY.

In this review we have a sufficient foundation of the history at Molokai, and from it we may safely draw some hopeful suggestions for the future treatment of the leprosy. We can see that the government is not warranted in providing for the leprosy on the economic basis of the president of the board of health. And we may confidently predict that the lives of the leprosy will be prolonged at Molokai if the leprosy were raised even to the level of that at Kalaheo. But it happens that we have in San Francisco a leprosy in which the effects of a liberal diet have been already shown. During the last two years 45 leprosy have been admitted and there has been an average of 20 patients. Most of the patients were discovered and admitted in an advanced stage of disease. Few of them were able to get out of the treatment wagon without assistance, and many were unable to leave their beds. Extensive alterations were necessary. One had paralysis of the eyelids, which would have gone on to blindness but for judicious management. All the patients were low in flesh and few were able to attend to their own wants. One leprosy committed suicide under fear of removal to China, and several have escaped. But there has been no deaths from leprosy, or from any of these intercurrent diseases which prevail at Molokai. At present there are 25 inmates. One Scandinavian and one native of the Islands. Every patient has improved in health, and has increased in weight. There are now no patients confined to bed and none who cannot wait upon themselves. Every open ulcer has been cured and it may be said with truth that the progress of leprosy has been actually arrested. One man especially was admitted 18 months ago with extensive ulceration of the mouth and face. He was greatly emaciated and not expected to live. His body was promoted to the professor of pathology for demonstration at the Cooper Institute. He was fed with liquid food and to dry his ulcers are all well, his food without the least difficulty. Another man was admitted about a year ago, with frightful ulcers on the sides of his face. He was unable to walk and in a state of complete exhaustion. These ulcers have long since been cured, and a few weeks ago he scaled the walls and escaped. These results are not due to medication. No medicines have been given. No special applications have been made. The cost of the "Frasco Balsam," "treated at Molokai," would more than pay the drug bill for a year. The improvements are wholly due to simple hygienic management and to the excellence and liberality of the food supply. It seems perfectly wonderful what a quantity of food these leprosy will consume. Doctor Foy, the superintendent physician and superintendent, says the average consumption is 1 1/2 B. of rice, besides flour, corn, sugar, eggs, milk, and tea, to say nothing of the cats and rats which are caught by the Chinese and eaten with great relish. Doctor Foy is of opinion that the leprosy requires a quantity of food equal to that of a strong and healthy laborer, and in addition thereto he must have enough to replenish the daily waste of tissue from disease. The more advanced the disease the more imperative is the demand for nourishment. It would be an injustice says he, to give them less than they now receive. If from any cause the appetite of one man fails, his rations will certainly be consumed by the remainder. It is not found possible to hurt them with more than a daily supply, otherwise they would feast one day and fast the next. Never before has a liberal and whole diet been fully and persistently tried. The leprosy of the middle ages were nothing but a congregation of leprosy people who lived on charity and fasted long enough at times. Sometimes they were allowed to beg among the people for a bare subsistence. If, as I believe, leprosy is a disease of exhaustion, caused by a insufficient and unwholesome food, what glorious results may be expected from a liberal supply of wholesome food.

I am of opinion that an improved dietary ought to be tried at Molokai, and that any organization it may be carried out without any great expenditure. At San Francisco the cost of a leprosy is less than that of a hoodlum or a convict and if once the physical condition of the leprosy at Molokai were raised so as to enable them to work, much could be done towards making them self sustaining. I have the honor to be, Sir, Yours obediently, J. H. STALLARD.

San Francisco, 632 Sutter street, July 5th, 1884.

How the "Trichinina" was discovered.

One day a "subject" was brought to Bartholomew's—the body of a man who had died "suddenly." In the course of dissection the knives of the operators were blunted by some hard substance disseminated through the muscular tissues. These minute objects were discovered to be calcareous, and their formation explained the resistance offered by them. Richard Owen secured some specimens, and refusing to consider them as mere cysts, broke them open, applied the microscope, and discovered the since well-known and dreaded trichinina spiralis, the abundant cause of death in German villages, where uncooked ham and sausages made of uncooked pork are frequently eaten. The famous paper on this incident, translated at once by a writer into European languages, and revealed the cause of symptoms previously referred to every cause but the right one. "Indirectly as well as directly," says Professor Owen, "this lucky discovery was useful, for it showed, among other things, how completely one may be misled by symptoms. The symptoms of trichinina are, or were, singularly deceptive. In its early stages it may easily be mistaken for diphtheria, dysentery. In its third stage it may take the form of several diseases, and in its later form, pleurisy, and pneumonia; and in its later form, for acute rheumatism. All this is now perfectly well known, and my contribution to practical medicine has been very handsomely acknowledged by German scientific men, who yet—no hard it is to change the food of a people—cannot restrain the great body of their people from eating uncooked pork. The village after the village has been decimated by trichinina—whole families have died from it; but people go on eating just the same.—London World.

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